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02/28/03 18:16:38 FAX 314 621 5065		0001
<p>ARMSTRONG TEASDALE LLP One Metropolitan Square, Suite 3000 St. Louis, Missouri 63102-2700 Phone (314) 621-5070 Fax (314) 621-6065 www.armstrongteasdale.com</p>		
Date: February 28, 2003	Serial Number: 09/507,521	
Please Deliver To:	Docket: 15-CT-5371	
Name: Examiner Chai C. Ho	PAPERS TRANSMITTED:	
Address: 11A Patent and Trademark Office	Amendment Transmittal (3 pgs.)	
Tel: (703) 305-3635	Amendment in response to Office Action	
Fax: (703) 744-7239	dated October 3, 2002 and Notice of	
From: Thomas M. Fisher	Non-Responsive Amendment dated	
	February 12, 2003 (19 pgs.)	
	Substantive of Modified Up Claims (3 pgs.)	
Total pages including cover page: 25		
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Facsimile Number 1-703-744-7239 on the date shown below		
Date: February 28, 2003		
	Thomas M. Fisher	
	Registration No. 47,564	
Applicant: Min Xie et al.		
Serial No.: 09/507,521		
Filed: February 18, 2000		
Art Unit: 2124		
Examiner: Chai C. Ho		
App. Dkt. No.: 15-CT-5371 (12553-191)		
For: METHOD AND APPARATUS FOR FAST NATURAL LOG(X) CALCULATION		
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ARMSTRONG TEASDALE LLP

One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
Phone: (314) 621-5070
Fax: (314) 621-5065
www.armstrongteasdale.com

Date: April 24, 2003

Please Deliver To:

Name: Examiner Chat C. Do

Firm: U.S. Patent and Trademark Office

Tel: (703) 305-5655

Fax: (703) 746-8679

From: Thomas M. Fisher

Serial Number: 09/507,521

Docket: 15-CT-5271

PAPERS TRANSMITTED:

Copy of Amendment Transmittal Filed on
February 28, 2003 (3 pgs.)

Copy of Amendment Filed on February 28, 2003
in response to Office Action dated October 3,
2002 and Notice of Non-Responsive
Amendment dated February 12, 2003 (19 pgs.)

Copy of Submission of Marked Up Claims Filed
on February 28, 2003 (2 pgs.)

Copy of Certificate of Facsimile Transmission
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Please find attached a copy of the papers filed February 28, 2003, a transmission report, and an auto-reply.


Thomas M. Fisher
Registration No. 47,564

Applicant: Min Xie et al.

Serial No.: 09/507,521

Filed: February 18, 2000

Art Unit: 2124

Examiner: Do, Chat C.

Atty. Dkt. No.: 15-CT-5271 (12553-191)

For: METHOD AND APPARATUS FOR FAST NATURAL LOG(X) CALCULATION

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ARMSTRONG TEASDALE LLP

One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
Phone: (314) 621-5070
Fax: (314) 621-5065
www.armstrongteasdale.com

Date: February 28, 2003

Please Deliver To:

Name: Examiner Chat C. Do

Firm: U.S. Patent and Trademark Office

Tel: (703) 305-5655

Fax: (703) 746-7239

From: Thomas M. Fisher

: Serial Number: 09/507,521
: Docket: 15-CT-5271
: **PAPERS TRANSMITTED:**
: Amendment Transmittal (3 pgs.)
: Amendment in response to Office Action
: dated October 3, 2002 and Notice of
: Non-Responsive Amendment dated
: February 12, 2003 (19 pgs.)
: Submission of Marked Up Claims (2 pgs.)

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Date: February 28, 2003


Thomas M. Fisher
Registration No. 47,564

Applicant: Min Xie et al.

Serial No.: 09/507,521

Filed: February 18, 2000

Art Unit: 2124

Examiner: Do, Chat C.

Atty. Dkt. No.: 15-CT-5271 (12553-191)

RE: METHOD AND APPARATUS FOR FAST NATURAL LOG/EXP CALCULATION

ARMSTRONG TEASDALE LLP

One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
Phone: (314) 621-5070
Fax: (314) 621-5065
www.armstrongteasdale.com

Date: February 28, 2003

Please Deliver To:

Name: Examiner Chat C. Do

Firm: U.S. Patent and Trademark Office

Tel: (703) 305-5655

Fax: (703) 746-7239

From: Thomas M. Fisher

Serial Number: 09/507,521

Docket: 15-CT-5271

PAPERS TRANSMITTED:

Amendment Transmittal (3 pgs.)

Amendment in response to Office Action

dated October 3, 2002 and Notice of

Non-Responsive Amendment dated

February 12, 2003 (19 pgs.)

Submission of Marked Up Claims (2 pgs.)

Total pages including cover page: 25**If all pages are not received, please contact Thomas Fisher at (314) 621-5070, ext. 7462****CERTIFICATE OF FACSIMILE TRANSMISSION**

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Date: February 28, 2003


Thomas M. Fisher
Registration No. 47,564

Applicant: Min Xie et al

Serial No.: 09/507,521

Filed: February 18, 2000

Art Unit: 2124

Examiner: Do, Chat C.

Atty. Dkt. No.: 15-CT-5271 (12553-191)

For: METHOD AND APPARATUS FOR FAST NATURAL LOG(X) CALCULATION

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PATENT
15-CT-5271

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Min Xie et al.

Serial No.: 09/507,521

Filed: February 18, 2000

For: METHOD AND APPARATUS
FOR FAST NATURAL LOG(X)
CALCULATION

Art Unit: 2124

Examiner: Do, Chat C.

Commissioner for Patents
Washington, D.C. 20231

TRANSMITTAL

1. Transmitted herewith is:

Amendment in response to Office Action dated October 3, 2002 and Notice of Non-Responsive Amendment dated February 12, 2003 (19 pgs.); Submission of Marked Up Paragraphs and Claims (2 pgs.)

STATUS

2. Applicant

✓ Claims small entity status.
✓ is other than a small entity.

CERTIFICATE OF MAILING/TRANSMISSION

I hereby certify that this correspondence is, on the date shown below, being:


MAILING

 deposited with the United States Postal Service with sufficient postage as "Express Mail Post Office to Addressee" in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231.

Date: February 28, 2003

FACSIMILE

✓ transmitted by facsimile to the Patent and Trademark Office


Thomas M. Fisher
Reg. No. 47,564

EXTENSION OF TERM

3. The proceedings herein are for a patent application and the provisions of 37 C.F.R. 1.136 apply.

(complete (a) or (b), as applicable)

- (a) _____ Applicant petitions for an extension of time under 37 C.F.R. 1.136
(Fees: 37 C.F.R. 1.17(a)-(d) for the total number of months checked below:)

Extension for response within:	Other than small entity Fee	Small entity Fee (if applicable)
_____ First month	\$ 110.00	\$ 55.00
_____ Second month	\$ 410.00	\$ 205.00
_____ Third month	\$ 930.00	\$ 465.00
_____ Fourth month	\$1,450.00	\$ 725.00
_____ Fifth month	\$1,970.00	\$ 985.00

Fee: \$ _____

If an additional extension of time is required, please consider this a petition therefor.

(Check and complete the next item, if applicable)

_____ An extension of _____ months has already been secured. The fee paid therefor \$ _____ is deducted from the total fee due for the total months of extension now requested.

Extension fee due with this request \$

OR

- (b) ☒ Applicant believes that no extension of term is required. However, this conditional petition is being made to provide for the possibility that applicant has inadvertently overlooked the need for a petition for extension of time.

FEE FOR CLAIMS

4. The fee for claims (37 C.F.R. 1.16(b)-(d)) has been calculated as shown below:

(Col. 1)		(Col. 2)		(Col. 3)	SMALL ENTITY	OR	OTHER THAN SMALL ENTITY
CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NO. PREVIOUSLY PAID FOR		PRESENT EXTRA	ADDITIONAL RATE FEE		ADDITIONAL RATE FEE
TOTAL INDEP.	30	MINUS	30	= 0	x \$9 = \$		x \$18 = \$
	-	MINUS		= 0	x \$42 = \$		x \$84 = \$
FIRST PRESENTATION OF MULTIPLE DEP. CLAIM					+ \$140 = \$		+ \$280 = \$
					TOTAL ADDITIONAL FEE \$	OR	TOTAL ADDITIONAL FEE \$

- (a) ☒ No additional fee for claims is required.

OR

- (b) _____ Total additional fee for claims required \$

FEE PAYMENT


5. _____ Attached is a check in the sum of \$ _____
 _____ Charge Deposit Account No. 01-2384 the sum of \$ _____
 A duplicate of this transmittal is attached.

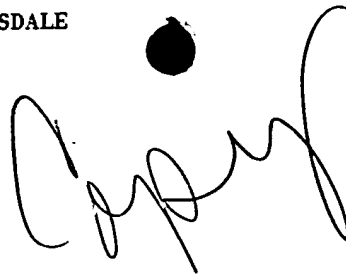
FEE DEFICIENCY

6. ☒ If any additional extension and/or fee is required, charge Deposit Account No. 01-2384.

AND/OR

- ☒ If any additional fee for claims is required, charge Deposit Account No. 070845 (GE Medical Systems).
7. _____ Other:


 Thomas M. Fisher, Reg. No. 47, 564
 ARMSTRONG TEASDALE LLP
 One Metropolitan Square, Suite 2600
 St. Louis, MO 63102-2740
 (314) 621-5070

15-CT-5271
PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Min Xie et al.

Serial No.: 09/507,521

Filed: February 18, 2000

For: METHOD AND APPARATUS
FOR FAST NATURAL LOG(X)
CALCULATION

Art Unit: 2124

Examiner: Do, Chat C.

AMENDMENT

Hon. Commissioner for Patents
Washington, D.C. 20231

Sir:

In response to the Office Action dated October 3, 2002, and the Notice of Non-Responsive Amendment dated February 12, 2003, Applicants respectfully request consideration of the following amendment:

IN THE ABSTRACT

A method for computing a natural logarithm function includes partitioning a mantissa region between 1 and 2 into N equally spaced sub-regions; precomputing centerpoints a_i of each of the N equally spaced sub-regions, where $i=0, \dots, N-1$; selecting N sufficiently large so that, within each sub-region, a first degree polynomial in m computes $\log(m)$ to within a preselected degree of accuracy for any m within the sub-region, where m is a mantissa of a binary floating point representation of a number; and computing a value of $\log(x)$ for a binary floating point